[Patent claims]

We claim:

1. (Amended) A method for isolating and purifying nucleic acids and/or oligonucleotides from a biological sample, [characterized in that] said method comprising:

   - disruption of the biological sample[is disrupted,] and removal of protein components and other insoluble components [are removed,] with the fraction not containing said protein and insoluble components being a residue,

   - addition of an aqueous solution of potassium acetate [is added] to the residue and removal of non-soluble components [are removed],

   - mixing and incubation of the potassium acetate-containing solution [is mixed and incubated] with an alcoholic solution containing a detergent,

   - obtaining the supernatant [obtained is] and contacting and incubating said supernatant [contacted and incubated] with a silica gel-like support material, and

   - isolating the purified nucleic acids and/or oligonucleotides [are isolated] from the soluble fraction.

2. (Amended) The method as claimed in claim 1, wherein [characterized in that] the alcoholic solution is a mixture of isopropanol with an ionic detergent.

3. (Amended) The method as claimed in claim 1 [or 2], wherein [characterized in that] the alcoholic solution contains one or more ionic detergents at a concentration of 0.5 to 10%

(w/v) in 100% strength alcohol.

4. (Amended) The method as claimed in claim 1, [any of claims 1 to 3,] wherein [characterized in that] an aqueous solution containing 1 to 6 M potassium acetate is used.

5. (Amended) The method as claimed in claim 4, wherein [characterized in that] the aqueous solution contains 2 to 4 M potassium acetate.

6. (Amended) The method as claimed in claim 1, [any of claims 1 to 5,] wherein [characterized in that] the silica gel-like support material used is a suspension of silicon dioxide.

7. (Amended) The method as claimed in claim 1, [any of claims 1 to 6,] wherein [characterized in that] the silica gel-like support material is [rewashed] washed at least once with acetone.

8. (Amended) The method as claimed in claim 1, [any of claims 1 to 7,] wherein [characterized in that] plasmid DNA with an endotoxin content of less than 100 U/μg is obtained.

9. (Amended) The method as claimed in claim 8, wherein [characterized in that] the endotoxin content is not more than 10 U/μg of plasmid DNA.

10. (Amended) A nucleic acid or oligonucleotide comprising [an endotoxin-free nucleic acid or oligonucleotide or] a nucleic acid or oligonucleotide with reduced endotoxin content obtainable according to a method as claimed in any of claims 1 to 9.

11. (Amended) A method of using [The use of] nucleic acids and/or oligonucleotides [obtained according to any of the

methods as claimed in any of claims 1 to 9 for] comprising transfecting eukaryotic or prokaryotic cells, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.

12. (Amended) A method of using [The use of] nucleic acids and/or oligonucleotides [obtained according to any of the methods as claimed in any of claims 1 to 9 for] comprising producing an agent for the treatment of genetic disorders, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.

13. (Amended) A kit [composition] comprising the following components:

- at least one solution suitable for the disruption of a biological sample,
- an aqueous potassium acetate solution,
- a solution of detergent/alcohol, and
- a silica gel-like support material.

14. (Amended) The kit [composition] as claimed in claim 13, wherein [characterized in that] the [following] components are [included]:

- a solution suitable for alkaline lysis of biological sample material,
- a salt solution containing 1 to 6 M potassium acetate,
- an alcoholic solution containing 0.5 to 10% (w/v) SDS in 100% strength isopropanol and
- a silica gel-like support material.

15. (Amended) The kit [composition] as claimed in claim 13 [or 14], characterized in that the support material included is a suspension of silicon dioxide.

16. (Amended) A method of [The use of potassium acetate for] isolating, purifying and/or separating [endotoxin-free nucleic acids and/or oligonucleotides or] nucleic acids and/or oligonucleotides comprising mixing a pre-purified biological sample lysate with potassium acetate, wherein such method results in the isolation, purification and/or separation of nucleic acids and/or oligonucleotides with reduced endotoxin content when compared to [from and of, respectively, a] the pre-purified biological sample.

We claim:

1. A method for isolating and purifying nucleic acids and/or oligonucleotides from a biological sample, said method comprising:

   - disruption of the biological sample and removal of protein components and other insoluble components with the fraction not containing said protein and insoluble components being a residue,

   - addition of an aqueous solution of potassium acetate to the residue and removal of non-soluble components,

   - mixing and incubation of the potassium acetate-containing solution with an alcoholic solution containing a detergent,

   - obtaining the supernatant and contacting and incubating said supernatant with a silica gel-like support material, and

   - isolating the purified nucleic acids and/or oligonucleotides from the soluble fraction.

2. The method as claimed in claim 1, wherein the alcoholic solution is a mixture of isopropanol with an ionic detergent.

3. The method as claimed in claim 1, wherein the alcoholic solution contains one or more ionic detergents at a concentration of 0.5 to 10% (w/v) in 100% strength alcohol.

4. The method as claimed in claim 1, wherein an aqueous solution containing 1 to 6 M potassium acetate is used.

5. The method as claimed in claim 4, wherein the aqueous solution contains 2 to 4 M potassium acetate.

6. The method as claimed in claim 1, wherein the silica gel-like support material used is a suspension of silicon dioxide.

7. The method as claimed in claim 1, wherein the silica gel-like support material is washed at least once with acetone.

8. The method as claimed in claim 1, wherein plasmid DNA with an endotoxin content of less than 100 U/μg is obtained.

9. The method as claimed in claim 8, wherein the endotoxin content is not more than 10 U/μg of plasmid DNA.

10. A nucleic acid or oligonucleotide comprising a nucleic acid or oligonucleotide with reduced endotoxin content obtainable according to a method as claimed in any of claims 1 to 9.

11. A method of using nucleic acids and/or oligonucleotides comprising transfecting eukaryotic or prokaryotic cells, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.

12. A method of using nucleic acids and/or oligonucleotides comprising producing an agent for the treatment of genetic disorders, wherein the nucleic acids and/or oligonucleotides are obtained according to any one of the methods claimed in claims 1 to 9.

13. A kit comprising the following components:
- at least one solution suitable for the disruption of a

biological sample,

- an aqueous potassium acetate solution,
- a solution of detergent/alcohol, and
- a silica gel-like support material.

14. The kit as claimed in claim 13, wherein the components are:
- a solution suitable for alkaline lysis of biological sample material,
- a salt solution containing 1 to 6 M potassium acetate,
- an alcoholic solution containing 0.5 to 10% (w/v) SDS in 100% strength isopropanol and
- a silica gel-like support material.

15. The kit as claimed in claim 13, characterized in that the support material included is a suspension of silicon dioxide.

16. A method of isolating, purifying and/or separating nucleic acids and/or oligonucleotides comprising mixing a pre-purified biological sample lysate with potassium acetate, wherein such method results in the isolation, purification and/or separation of nucleic acids and/or oligonucleotides with reduced endotoxin content when compared to the pre-purified biological sample.